



Comments on reports by Analysys Mason and Frontier Economics for the LLU and WLR charge controls

November 2011

NON-CONFIDENTIAL VERSION

Introduction

1. Openreach provides some high level comments on the reports prepared by Analysys Mason and Frontier Economics on behalf of Sky and TalkTalk, in particular on the following reports:
 - Frontier Economics report on the “Analysis of the estimation of efficiency assumptions” dated October 2011
 - Analysys Mason report on “Line length and line costs” dated October 2011
 - Frontier Economics report on “Duct and Copper Valuation” dated October 2011
 - Analysys Mason report entitled “Cumulo Rates” dated October 2011.
2. Openreach has limited its comments to new issues of substance, and/or comments to correct obvious errors or omissions. We have not responded to all points raised in the time available, nor to all reports.

Efficiency

3. In October 2011, Frontier Economics published a note entitled “Analysis of the estimation of efficiency assumptions”. The note assesses the assumptions on the rate of efficiency improvements that have been derived by Ofcom in its consultation document for the WLR and LLU charge controls.
4. Openreach limits its comments to three points:
 - the industry benchmarking report relied upon by Ofcom has been superseded by a 2011 industry benchmarking report which suggests that little or no ‘catch up’ to the Peer Average is required during the charge control period
 - the historical rates of efficiency must be considered in context, particularly many of the cost savings are not repeatable, and one-off savings should not be taken into account when setting a sustainable target
 - BT Group cost reductions do not necessarily translate directly into efficiency savings, and may have been due to other factors such as volume shifts and inflation.

Industry benchmarking report

5. BT Group plc participates in a benchmarking study that is subject to strict confidentiality requirements. Frontier Economics refers to this industry benchmarking report as Ofcom relies on it to support the higher end of the efficiency range.
6. In its consultation document, Ofcom relied on a 2009 industry benchmarking study. The study is conducted at a BT Group level, although it is possible for Openreach’s input costs to be identified and assessed. Frontier Economics notes that “...*Ofcom estimated that for Openreach to move into line with the peer average it would need to achieve annual cash savings of around 5% over three years and to move into line with the best in class...would require annual cash savings of around 5.5%*”.¹ Openreach considers that Ofcom misinterpreted the conclusions of the benchmarking study. Ernst & Young (E&Y) have independently reviewed the 2009 report and concluded that it implied an annual efficiency improvement of between 1.9% to 2.6% over a three year control to catch-up to Peer Average.
7. The 2009 industry benchmarking study has now been superseded by a 2011 study. It is appropriate for Ofcom to use this updated study as it reflects recent cost movements of Openreach and the Peer Average, and therefore provides a better indicator of Openreach’s relative unit costs and (to the extent that such information can be used as a proxy for an ‘efficiency gap’) Openreach’s efficiency.
8. Openreach has asked E&Y to assess the 2011 study on the same basis that it assessed the 2009 report. While again noting the limitations of the use of the industry benchmarking report for the purpose of setting an efficiency target in a charge control, E&Y concluded

¹ Frontier Economics, *Charge control review for LLU and WLR services – Analysis of the estimation of efficiency assumptions*, October 2011, pages 10-11 (referred herein as “Efficiency note”).

that Openreach’s unit costs are broadly equal to or lower than those of the established Peer Average, suggesting little or no ‘catch up’ to the Peer Average.

9. The updated industry benchmarking study supports an efficiency target below the bottom of Ofcom’s range. Frontier Economics cites a frontier shift of between 2-3% per annum from the 2008 NERA report.² If combined with the 2011 industry benchmarking study (which suggests little or no catch-up to Peer Average), Frontier Economics would estimate a total efficiency rate of between 2-3% for Openreach to move in line with the more efficient operators, which would result in an efficiency target below the bottom of Ofcom’s range.

Historical efficiencies

10. Frontier Economics suggests that recent past performance is a good indicator of likely future performance.³ This is not necessarily the case, as it is important to consider historical efficiencies in context – the ability for a business to achieve cost reductions may vary in response to many factors, such as the macro-economic and political environment, technological developments etc. Therefore focussing only on the recent past may not provide a good indicator of sustainable annual efficiencies.
11. Openreach believes that Ofcom could obtain a more appropriate view of a sustainable efficiency target by considering historical efficiencies achieved over a longer timeframe. Since Openreach’s inception, Openreach has achieved an average [X] efficiency per annum on total costs, or [X] when adjusted to account for one-off items.

Table 1 Openreach historical efficiencies

	06/07	07/08	08/09	09/10	10/11	5 yr Average
Prior year end cash costs (excl leavers)	[X]	[X]	[X]	[X]	[X]	
In year efficiencies	[X]	[X]	[X]	[X]	[X]	
Efficiency as a % of total cash costs	[X]	[X]	[X]	[X]	[X]	[X]
Adjusted Efficiency*	[X]	[X]	[X]	[X]	[X]	[X]
*Excludes one-off items						

12. Frontier Economics argues that there must be a “*clear structural change*” in order to adjust recent past performance for one-off items.⁴ The one-off items which Openreach has adjusted for in Table 1 above reflect significant changes to a particular cost item in a

² Frontier Economics, Efficiency note, page 10.

³ Frontier Economics, Efficiency note, page 11.

⁴ Frontier Economics, Efficiency note, page 11.

year but cannot be replicated over the short to medium term. In particular the step change in Openreach's cumulo transfer charges from 2009/10 to 2010/11 was largely the result of BT Plc's cumulo rateable value being reassessed for the new 2010 rating list in England, Scotland and Wales. This change will not be replicated during the charge control period and in any case efficiency calculations are not relevant to cumulo charges. Similarly, the change to a single national supplier for civil engineering services on a fixed term contract represents a step change in costs without the ability for the savings to be replicated, and thus may be considered a "clear structural change".

13. Contrary to Frontier Economics' assertion, Openreach's historical performances have not continually exceeded its forecasts. Frontier Economics considers that "*relatively more weight can be given to BT's and Openreach's historical performance which has continually exceeded BT's forecast efficiencies. This supports the upper end of Ofcom's range of 3.5% and 5.5%...*".⁵ Openreach has provided Ofcom with detailed analysis showing its underachievement against its internal forecast efficiencies targeted in more than one year. The confidential information provided by Openreach to Ofcom is shown in the table below.⁶

Table 2 Efficiency targets and achievements by Openreach (unadjusted for one-off savings)

[REDACTED]

14. [REDACTED]

15. Frontier Economics incorrectly argues that "*BT has shown large efficiency gains since 2008 when the NERA study was conducted (on average approximately 6% per annum excluding the cost of implementation)*".⁷ Openreach notes the following two points:

- a) Frontier's calculation of "efficiencies" is based on its own analysis contained in its report which concludes that "*BT Group has achieved operating cost reductions... with an average over the last 3 years of over 6% in nominal terms*".⁸ Cost reductions do not necessarily translate into true efficiencies.
- b) The NERA study was conducted using financial information from 1999-2006. Since the end of the period assessed by NERA, Openreach has on average achieved efficiencies savings of [REDACTED], as shown in Table 1 above.

BT Group cost reductions

16. Frontier Economics has misinterpreted BT public statements as supporting an efficiency target at the high end of the Ofcom range.
17. Frontier Economics relies on quotes from BT's financial results publications and briefings to analysts to support its efficiency arguments, whereas the sources relate to

⁵ Frontier Economics, Efficiency note, page 1.

⁶ Provided to Ofcom on 12 August 2011 per the section 135 for the Leased Lines Charge Control, with permission granted by Openreach for Ofcom to utilise in the context of the WLR, LLU and ISDN30 charge controls on 17 August 2011. Openreach also discussed the information in a meeting on 13 September 2011.

⁷ Frontier Economics, Efficiency note, page 6.

⁸ Frontier Economics, Efficiency note, page 13.

actual cost reductions being achieved within BT. Cost reductions do not necessarily translate into true efficiencies of either BT Group, nor of Openreach, as they may reflect factors such as volume changes etc. For example, Frontier Economics cites savings through lower connection activity in the housing market, but the reduced capex spend presumably reflects lower connection volumes.

18. Second, Frontier Economics misinterprets the quote of Mr Tony Chanmugam, BT Group Finance Director. Frontier Economics tries to suggest that Mr Chanmugam's comment that: "*What we are doing is we are evolving, we are taking the low hanging fruit off and we are now moving into middle hanging fruit...*"⁹, indicates that the current levels of efficiency being achieved are to continue in the medium to longer term. In fact Mr Chanmugam is clearly saying that it is going to become more difficult to achieve cost efficiencies going forward and investors should not necessarily expect efficiencies going forward at the level observed in 2010/11.

⁹ Frontier Economics, Efficiency note, page 17.

Line length and line cost

19. In October 2011, Analysys Mason released a study entitled “Line lengths and line costs” for MPF and WLR in the United Kingdom. Using a study of broadband speeds, Analysys Mason calculated a theoretical average line length and concluded that broadband lines are 33% to 35% shorter than WLR lines.
20. Openreach considers this study to be fundamentally flawed as the results do not reflect the analysis of Openreach’s network using physical line lengths and it is inconsistent with similar analysis undertaken by Analysys Mason in the recent past:
 - the average physical line length of all Openreach copper lines in the UK is [X] kilometres
 - in exchanges unbundled by [X], the average physical line length is only 0.4% shorter than the national average
 - Analysys Mason has previously determined the average line length in the UK for all lines to be 1.704 kilometres, at odds with the averages stated in this study.

Use of broadband speed to determine line length

21. Openreach considers that there are fundamental flaws from calculating line length based on broadband speed information:
 - all lines capable of supporting broadband delivery should be included in the sample set. However, some Communications Providers (CPs) make commercial decisions as to whether or not to provide service to end-users with a longer line length (which according to Analysys Mason’s method, could tend to indicate a shorter average line length for such CPs)
 - some CPs may also undertake activities which alter the speed on the line without impacting on line length e.g. equipment to stabilise the line, bonded copper lines etc.
 - average speeds can be affected by interference and noise in the network
 - average speeds can also be affected by wiring in the customer premise and/or customer equipment.¹⁰
22. Additionally, Analysys Mason utilises theoretical speed curves to estimate line lengths, which are unlikely to reflect reality and factors such as electrical noise and interference.

Physical Line Length

23. Rather than using theoretical information, Openreach is able to calculate average line length using actual data for the physical length of its copper lines. Openreach’s AMIS

¹⁰ The impact of customer wiring has recently been noted by Ofcom as a factor – see Ofcom, *Infrastructure Report – The first Communications Infrastructure Report*, 1 November 2011, available from: http://stakeholders.ofcom.org.uk/market-data-research/telecoms-research/broadband-speeds/comms-infrastructure-report/?utm_source=updates&utm_medium=email&utm_campaign=infrastructure-report-oct2011

system¹¹ holds records of the physical characteristics (including line length) of all copper lines in the UK – approximately 26 million records. Using the physical line length data, Openreach has calculated the average to be [X] kilometres for all UK copper lines (as measured from the exchange to the end-user premise).

24. Openreach has also calculated the average physical line length for lines in unbundled exchanges to compare against the UK average for all copper lines. Using the same AMIS records, Openreach has identified the physical average line length in exchanges unbundled by [X] to be [X] kilometres. That is, the average line length is [X] in [X] exchanges, indicating that the lines are 0.4% shorter than the average for the total UK average line length. This is shown in Table 3 below.

Table 3 Lines Lengths for all UK lines and for lines in [X] exchanges

Line Length from records	total LL (m)	Total lines	Average LL (m)	Difference from National Average	% total UK lines
Total UK	[X]	[X]	[X]		
[X] LLU	[X]	[X]	[X]	-0.4%	[X]
Non-[X] LLU	[X]	[X]	[X]	[X]	

25. Openreach recognises that there may be technology limitations to providing a high quality broadband service to end-users with very long line lengths. Lines with attenuation over 70dB are not likely to support speeds above 0.5 Mbit/s, suggesting that lines with a length greater than 6.5km would be affected.¹²

26. Openreach has recalculated the average line length in exchanges unbundled by [X] after removing lines with a length greater than 6.5km. As shown in Table 4 below, the average line length then reduces to [X], which is approximately 1.6% shorter than the UK national average.

Table 4 Removal of lines greater than 6.5 kilometres

Line Length from records less than 6.5m	total LL (m)	Total lines	Average LL (m)	Difference from National Average	% total UK lines
Total UK	[X]	[X]	[X]		
[X] LLU <6.5m	[X]	[X]	[X]	-1.6%	[X]

¹¹ The Analysys Mason report refers to Openreach’s PiPER system, which contains a more detailed inventory of physical line characteristics and network characteristics than the AMIS system, however PiPER does not yet cover the entire UK.

¹² While there is no clear demarcation, lines over 7.5km may not support a functional broadband speed (128kbit/s).

27. The Analysys Mason report appears to assume that only MPF lines carry broadband services. SMPF is not mentioned, either explicitly or implicitly in their analysis. Given the majority of broadband lines are WLR+SMPF, it is unclear how Analysys Mason could establish that on average all WLR lines must be longer than MPF. Further, it would be perverse for Ofcom to lower the costs allocated to MPF lines compared with WLR lines on the basis of Analysys Mason's conclusion regarding line lengths, as this could incentivise MPF providers to only serve end-users on shorter line lengths, and thus lead to a self-fulfilling prophecy.

Previous Analysys Mason research

28. Openreach notes that Analysys Mason has previously determined the average line length in the UK to be 1.704km, which is inconsistent with its conclusions in this report.¹³
29. Table 5 below undertakes a simple reverse engineering of Analysys Mason's 2008 assessment, which breaks down exchanges into a number of sub-types based on the size of the population served. In the final column, Openreach has simply multiplied the average straight line distance to the exchange by the number of premises to calculate the total line length. By then dividing this by the number of premises indicates an average line length in the UK of 1.704km.

¹³ Analysys Mason, Final report for the Broadband Stakeholder Group – the costs of deploying fibre-based next generation broadband infrastructure, 8 September 2008, page 4. Available from: <http://www.analysismason.com/PageFiles/5766/Analysys-Mason-final-report-for-BSG-%28Sept2008%29.pdf>

Table 5 Reverse engineering 2008 Analysys Mason line length average

Geotype	Classification criteria (distances are straight line)	Total no. of premises (domestic + business)	Average straight line distance from exchange to premise (m)	Average straight line distance x number of premises
Inner London	Inner London	1445789	969	1400969541
>500k pop	Major city (pop = 500k+)	3164456	1391	4401758296
>200k pop	City (pop = 200k+)	2794786	1410	3940648260
>20k lines (a)	>20k lines, <2km from exchange	2853914	1174	3350495036
>20k lines (b)	>20 000 lines, >2km from exchange	1744926	3364	5869931064
>10k lines (a)	>10 000 lines, <2km from exchange	4355457	1095	4769225415
>10k lines (b)	>10 000 lines, >2km from exchange	1553331	2785	4326026835
>3k lines (a)	>3000 lines, <1km from exchange	2759317	574	1583847958
>3k lines (b)	>3000 lines, >1km from exchange	3190774	3362	10727382188
>1k lines (a)	>1000 lines, <1km from exchange	1102702	487	537015874
>1k lines (b)	>1000 lines >1km from exchange	1149607	2850	3276379950
<1k lines (a)	<1000 lines, <1km from exchange	438430	405	177564150
<1k lines (b)	<1000 lines >1km from exchange	702971	2971	2088526841
TOTAL		27256460		46449771408
Average line length				1.704km

30. Finally, if it were assumed that that LLU operators would be unlikely to unbundle an exchange with less than 3,000 end-users, then the Analysys Mason results suggest an average line length of 1.692km. These conclusions are clearly at odds with those suggested in its current analysis with regard to line lengths for different types of customers.

Duct and Copper Valuation

31. In October 2011, Frontier Economics published a report entitled “Duct and Copper Valuation”. The report supports the continued application of the RAV adjustment and Ofcom’s exclusion of the BT revaluation. In addition, it sets out some proposals for projecting forwards this valuation for the purpose of setting the charge controls.
32. Openreach has focussed on the following points:
- any duct and copper valuation should permit neither an over-recovery nor an under-recovery of efficiently incurred costs
 - Frontier Economics’ implicit proposal setting the depreciation charge does not provide guidance as to how it should be calculated
 - Frontier Economics’ unsubstantiated assertion that real costs will decrease over time, the subsequent flawed proposed index for valuation purposes and suggestions regarding other parameters used by Ofcom to value duct assets and the appropriate Modern Equivalent Asset (MEA).
33. The methodology that is used for the valuation of duct and copper is complex. Openreach has endeavoured to restrict its observations to new points raised by Frontier Economics, but we have cross-referred to previous submissions where appropriate. In addition, we point out some factual errors in the Frontier Economic report.

Cost recovery and valuation

34. Frontier Economics maintains that for local access assets the key requirement is that charges do not permit over-recovery of costs. The corollary of this, which Frontier Economics does not recognise, is that they should also not, whether by design or otherwise, impose an under-recovery of costs.
35. There is competition to BT’s fixed access services from cable and mobile networks and it is therefore important that charges for local access assets are set at the competitive level. That said, even if one were to accept Frontier Economics’ assertion that this is not the case and that charges do not need to be set at the competitive rate, then there is still a need to consider how regulation provides for cost recovery over the lifetime of the asset. As Ofcom has stated on numerous occasions in the past,¹⁴ this requires the consistent application of either Current Cost Accounting (CCA) or Historical Cost Accounting (HCA) principles over the lifetime of the asset. This is because switching between methodologies from time to time, as suggested by Frontier Economics, introduces a significant risk that either under-recovery or over-recovery of costs will occur.

Proposal for setting the depreciation charge

36. In its report, Frontier Economics suggest the following methodology:¹⁵

¹⁴ For example, refer Ofcom, *Charge control review for LLU and WLR services*, 31 March 2011, paragraph A5.5 (referred herein “Ofcom consultation”).

¹⁵ Frontier Economics, *Duct and copper valuation – a report prepared for Sky and Talk Talk Group*, October 2011, page 2 (referred herein “Duct report”).

- use the RAV as proposed by Ofcom with indexation for post 1997 assets¹⁶
- set depreciation equal to assessed capital expenditure required for operating capital maintenance (OCM)
- project forward the RAV based on capex less depreciation¹⁷ plus an index based revaluation.
- set costs equal to depreciation less any holding gains.¹⁸

37. We interpret Frontier Economics' suggestion on setting depreciation charges as meaning that the depreciation charge should be set at the level required to maintain the current level of operating capacity. However, no guidance is offered as to how this should be calculated.

38. It is assumed that Frontier Economics is not, in fact, suggesting a change from Financial Capital Maintenance (FCM) to OCM although this would appear to be consistent with their argument. If such a change were to be considered, Ofcom would need to consult on it. Openreach believes the depreciation charge should be that calculated using objective and established accounting rules, as at present. If capital expenditure is below depreciation, and the former is used, then there is a risk of under-recovery of costs over the lifetime of the asset.

39. There are two key issues with this proposal:

- Frontier Economics does not offer any guidance as to how the depreciation charge would be calculated to maintain the current level of operating capacity
- if Frontier Economics' proposal is to be considered, Ofcom would need to propose how the depreciation charge would be calculated. As this is a fundamental change to Ofcom's proposals, further consultation on this issue would be required.

40. We do agree with Frontier Economics that “[a]ny method which sets charges such that investors in BT can expect over time to recover capital expenditure and the opportunity cost of financing the carrying value of the assets, will meet the key objectives of maintaining sustainable investment while preventing excessive prices”.¹⁹ What is known as FCM CCA will do this and thus also ensure that a consistent approach is “rolled forward” between controls.

Real costs over time

41. Frontier Economics proposes indexation in the third step of its suggested approach. Frontier Economics states that there has been an 8% reduction in unit prices in 2009/10 which would create a CCA holding loss.²⁰ The implication is that this creates a CCA

¹⁶ This is the approach outlined in the Ofcom consultation — Openreach has provided its views in its July 2011 response.

¹⁷ Logically the same depreciation as under step 2 of Frontier Economics' methodology.

¹⁸ We assume that Frontier Economics' proposal would also add in any holding losses but its report is silent on this point.

¹⁹ Frontier Economics, Duct report, page 8.

²⁰ Frontier Economics, Duct report, page 17.

holding loss, which decreases depreciation and hence gives rise to a cost increase in the year to which it applies.

42. We note further that Frontier Economics say that: “[a]ny duct valuation should however reflect the actual movements in the replacement cost of duct since the expenditure was made.
- a) *Changes in costs will be driven by a combination of inflation in inputs and efficiency gains. For example, BT/Ofcom has estimated that there was an 8% nominal reduction in the unit cost of duct in 2009/10 due to efficiency gains resulting from a move to national purchasing. As the rate at which BT makes efficiency gains apparently exceeds the rate at which unit costs of key inputs such as labour increase, the unit cost of duct should decline in real terms over time.*
 - b) *This does not appear to have been taken into account in Ofcom’s modelling which is based on a construction price index which appears to be a poor proxy for movements in BT’s costs.”²¹ [Emphasis added]*
43. The first statement a) suggests Frontier Economics is supporting a CCA valuation for duct and Openreach agrees with this, as per our response to Ofcom’s consultation.
44. As for statement b), now that Openreach has already moved to national purchasing there is no scope to do so again. Therefore the efficiency gains resulting from the move to national purchasing in 2009/10 are clearly one-off in nature. It is logical that Ofcom would ignore such a one-off saving for the purpose of modelling likely future price changes. Moreover, it is not logical or possible, based on one off savings in 2009/10, for Frontier Economics to conclude that Openreach’s costs will decline in real terms over time; indeed, the economic evidence referenced in Openreach’s response to Ofcom’s consultation clearly contradicts Frontier Economics’ assertion.
45. This does highlight one of the difficulties in using an indexation approach to valuation of assets: that indices, whether general, like RPI, or more specific, like GBCI, do not move in a way which reflects BT’s actual experience of price changes. This is precisely why absolute valuation is considered to be a more appropriate approach, as outlined in Openreach’s response to the Ofcom consultation.
46. Frontier Economics’ key concern is that “Any duct valuation should [however] reflect the actual movements in the replacement cost of duct since the expenditure was made”.²² The key point is that, whatever changes happen year to year in unit prices, FCM CCA still provides for cost recovery and no more over the lifetime of the asset. It appears remiss of Frontier Economics to not recognise this point in any way.

Indexation and valuation movements

47. Openreach provided comments on the use of indexation in its response to Ofcom’s consultation and clearly, if indexation is used, then great care must be taken to identify the right index. Frontier Economics has failed to demonstrate such care in choosing the right index and the proposal that RPI should be reduced by 2% “to reflect possible

²¹ Frontier Economics, Duct report , page 1

²² Frontier Economics, Duct report, page 1.

*efficiency savings over time*²³ is unfounded. Not only is this number completely unsubstantiated but is at odds with the key relevant facts as Openreach has explained in its response to the Ofcom consultation e.g. labour productivity has not increased by such a level over the long term.

48. Frontier Economics show a number of examples of Gross Replacement Cost (GRC) and Net Replacement Cost (NRC) based on price indexation²⁴ and refer to “*unexplained movements*” in the CCA valuation of duct as a result.²⁵ However, Ofcom will be aware of the explanation for these movements from Openreach’s response to the consultation:

- there was an increase in GRC and NRC in 2010/11 due to a combination of the specification of the RAV model and revisions to the national discount factor used in the duct valuation to allow for economies which would be available to a market entrant rolling out a national network
- in 2006/07, in the Cost of Copper review, Ofcom determined that duct should have an asset life of 40 years and the implementation of this led to assets older than 40 years being brought up to full depreciation and written out leading to a decrease in both GRC and NRC.

Parameters in the Ofcom model

49. Frontier Economics states that the main issue for Ofcom are:

- the opening RAV
- the projected depreciation charges for the price control period
- the asset revaluation during the price control period.²⁶

50. Openreach agrees that these are the main issues. In our response to the Ofcom consultation we set out why the current RAV approach does not provide for cost recovery over the lifetime of the duct assets.

51. Frontier Economics asserts there is an expectation, not borne out, that depreciation should be in line with annual capex; the implication being that Ofcom overstates the duct value. However, CCA depreciation greater than capex simply reflects a fluctuating level of build activity for duct, which is a very long-lived asset, meaning the stock is high relative to the flow of new build. Frontier Economics’ assertion is thus at odds with the circumstances.

52. Openreach accepts it is necessary to take view on changes in unit asset valuations to estimate annual capital cost allowance. Whether a price index is used, as Frontier Economics suggests, seems to Openreach to be simple a mechanical step (combining forecast unit cost changes with forecast efficiency gains). A key issue, which is not recognised in the Frontier Economics note, is that, properly applied, the point of any such price index will not be to change total allowed costs in the long term but to change the

²³ Frontier Economics, Duct report, pages 17 and 34.

²⁴ Frontier Economics, Duct report, section 3.

²⁵ Frontier Economics, Duct report, page 17.

²⁶ Frontier Economics, Duct report, section 4.

“time profile of cost recovery” and that therefore there is a need to be consistent over the lifetime of the asset.

Modern Equivalent Asset

53. Frontier Economics states that “[t]he use of fibre to the premises (FTTP) for new build access networks suggests that copper cable is no longer the modern equivalent asset (MEA) for local access networks”.²⁷ For fibre to be the MEA of copper, it needs to be available and to be used in its place. However, fibre is not currently sufficiently widely available for this to be true. In addition, the fibre network would need to be able to offer the same functionality as the existing copper network – in terms of broadband speeds, a fibre network can clearly provide a higher level of capability, but a FTTP voice service cannot operate without a local power supply, making emergency calls vulnerable to local power failures. There is, in effect, too great a functional difference between fibre and copper for one to be the MEA of another.
54. Finally, given that much of the fibre deployed in the access network is for Fibre to the Cabinet, fibre cannot be regarded as a replacement for copper, but is an overlay network. In these circumstances, fibre cannot be taken as the MEA for copper.

²⁷ Frontier Economics, Duct report, page 12.

Cumulo Rates

55. In October 2011, Analysys Mason published a report entitled “Cumulo Rates”. The report provides a critique of the treatment of cumulo rates within Ofcom’s LLU and WLR charge controls and provides suggestions for alternative methods.
56. Rating and in particular the rating of telecoms networks is a specialist area. Analysys Mason’s report demonstrates some fundamental misunderstandings on these matters. Therefore, we have not sought to address all of the errors in the Analysys Mason report, but instead have provided greater explanation of the issues while focusing on the key points.
57. Openreach confines its comments to the following points:
- cumulo rates apply to all of BT’s rateable network assets across the UK. Cumulo rates are not a tax on commercial property as Analysys Mason states
 - rateable assets, and not profits, cause cumulo rates. Even if BT made zero profits it would still have a cumulo assessment and its Rateable Value (RV) would not be zero. It is would be wrong to allocate BT Plc’s cumulo rates liability on product profitability as Analysys Mason suggests
 - BT’s rates for 2010/11 contain a *de minimis* amount for Next Generation Access (NGA) services, which has not been forecast by Ofcom. There is then no need to adjust Ofcom’s forecasts for cumulo rates for NGA as Analysys Mason argues.

What are cumulo rates?

58. Analysys Mason has mischaracterised cumulo rates, stating that: “*Cumulo rates*’ is the phrase used to describe a tax on commercial property”. This is incorrect. BT Plc’s “cumulo rates liability” covers what BT Plc pays in non-domestic rates on its rateable network assets across the UK. These are primarily duct, fibre, copper and exchange buildings but also include other street assets such as payphones, cabinets, and manholes. Non-domestic rates apply to a range of different assets, not just commercial property.
59. BT Plc’s cumulo rates bill covers the non-domestic rates that BT Plc pays:
- on its central list hereditaments in England and Wales
 - on the designated lands and heritage maintained now by the Renfrewshire assessor in Scotland
 - on the 26 BT telecommunications network hereditaments in Northern Ireland.

These are referred to as “cumulo” assessments because all the relevant rateable assets are valued together.

How are cumulo rates calculated?

60. Non-domestic rates are a tax on assets that are defined to be “rateable”. Non-domestic rates are not a tax on profits. Corporation tax, which is separate to and distinct from non-domestic rates, is a tax on taxable profits of relevant entities. Non-domestic rates are

raised on many assets that are occupied by organisations that are non-profit making, e.g. schools, hospitals, libraries etc.

61. Non-domestic rate liabilities are calculated by applying a rate poundage to a RV. The rating authorities have to assess the RV of each hereditament on their lists under statutory principles. Conceptually, RVs reflect an assumption that there are hypothetical tenants who wish to rent the hereditament from a hypothetical landlord, who owns that hereditament and which, in this case, comprises BT's rateable network assets. The RV is the rent that would be agreed assuming that the tenant has an annual tenancy from year-to-year on "Fully Repairing and Insuring" terms and with a "reasonable prospect of continuance". The task of the valuer is to estimate the rent value that the hypothetical landlord and the hypothetical tenant will negotiate.
62. In England and Wales rate poundages change annually, by statute, by the change in the all items RPI index as at the previous September. In Scotland changes to rate poundages are not legally stipulated but the Scottish authorities have adopted a policy of ensuring their rate poundages match those set in England and Wales. This means that rate poundages in Scotland effectively change by the previous September's RPI index. Changes in rate poundages are again not legally specified in Northern Ireland and some elements of the rate poundage are at the local council's discretion. Rate poundages in Northern Ireland have historically changed approximately by RPI.
63. The calculation of the amount BT pays on its cumulo hereditaments is determined by a set of statutory rules. The rating authorities are required to apply the relevant legislation and they have a statutory responsibility to maintain accurate rating lists. Contrary to Analysys Mason's implications, the rating authorities cannot make subjective assessments regarding the amount BT must pay.

Rating valuation methodologies

64. Analysys Mason asserts that "profits cause cumulo". This is incorrect. As explained below, rateable assets cause cumulo. If BT Plc had no rateable assets it would have no cumulo hereditaments, regardless of profitability. Even if BT Plc made no profits it would still have cumulo assessments and their RVs would not be zero.
65. Valuation officers estimate rateable values based on evidence. They may use evidence from more than one source to inform their views of an RV. Rental evidence may be available, though that is not the case for the BT network rateable assets. Large and complex hereditaments such as the BT network tend to be valued using evidence drawn from a Contractors Basis Valuation (CBV) calculation and/or a Receipts and Expenditure (R&E) calculation.
66. A CBV calculation provides evidence by estimating how much it would cost the tenant to replicate the functionality of the hereditament at a certain date. Allowances are made for technical and functional obsolescence and a statutory de-capitalisation rate applied to convert that into an annual equivalent.
67. A CBV makes no estimates of the landlord's or tenant's profitability: the calculation focuses on the landlord's assets with no reference to the assets that the tenant may contribute to the transaction. The estimated replacement costs, prior to application of the statutory decapitalisation rate but after allowances, could be interpreted as something

similar to the depreciated replacement costs of the rateable assets. So if a hereditament covering a large collection of contiguous rateable assets was assessed using evidence from a CBV and there was a need to allocate rating liabilities across those assets then depreciated replacement costs would be an obvious choice.

68. A R&E valuation considers a set of cash flows and evaluates how much the hypothetical tenant could *afford* to pay the hypothetical landlord. It is a residual valuation approach that is employed in many property transactions. Currently the valuation authorities use evidence from an R&E valuation to inform (but not necessarily set) their view of the rateable value of BT's rateable network assets. There are many cash flows involved: revenues, operating costs, capex on the hypothetical tenant's own assets, contributions to maintain landlords' assets etc. The calculations can be quite complex because of the need to comply with rating practice as established through legislation and case law. A simple example is that any operating costs associated with renting rateable assets (plus non-domestic rates liabilities) need to be excluded because these are what this residual calculation is designed to estimate.
69. Despite the complexities the way the Valuation Office Agency (VOA) applies the R&E calculation when assessing BT Plc's cumulo assessment can be summarised as consisting of two key steps:
- forecasting a divisible balance: this is the cash flow that the combination of the landlord and tenant's assets would be able to generate
 - subtracting the tenant's required cash flow: this is effectively a risk adjusted return that the tenant would require to earn on all the assets that the tenant brings to the transaction. For a telecoms network hereditament tenant's assets include switches, routers, modems, computers etc.
70. The net result - the residue - is therefore something that could be interpreted as a proxy for the expected return that the landlord is willing to accept on the rateable assets that he is offering for rent. It is not the profit attributed to Openreach or any other collection of businesses within BT's regulatory financial statements. Nor is "regulatory profit" a good proxy for this residual because it does not distinguish between what, in the rating world, are landlord and tenant assets.
71. Both the valuation methods outlined above estimate the benefit to the tenant of occupation of the rateable (landlord) assets. It is the use that the tenant can make of those assets that is important. The R&E method makes a clear distinction between landlord and tenant assets: the CBV focuses solely on the landlords assets. None of the calculations uses estimates of the tenant's profitability as a measure of rateable value.

Allocation of cumulo rates within BT

72. Analysys Mason advocates allocation of cumulo rates to products based upon profits. We have outlined above that it is rateable assets, not profits, that drive cumulo rates. Therefore there is no causal link that justifies allocating cumulo rates on the basis of product profitability.
73. The rateable value of BT's network hereditament reflects the value of all assets considered together, and it cannot be deconstructed to reflect individual lines of business

within BT or individual products. The courts have confirmed that the BT network rateable value cannot be deconstructed. Therefore, for regulatory purposes BT uses profit weighted NRCs to allocate cumulo costs to products. This methodology has several advantages over other potential methods.

74. A key principle for the allocation of cumulo costs to products is that the allocation basis must reflect the use or occupation of rateable assets. Since rateable values reflect the benefit to the tenant of occupying rateable assets then one would expect, other things being equal, that the more rateable assets that are occupied the greater the charge should be. Conversely, it would be odd if a service that did not use any rateable assets were to be allocated a share of cumulo costs.
75. Profit weighted NRCs contain the following characteristics, which are desirable characteristics of any allocation basis:
- have clear links back to underlying rating and valuation theory and calculations
 - be practical: manageable, maintainable and relatively simple
 - be relatively stable and consistent to reduce regulatory uncertainty.
76. BT chose originally to allocate BT Plc's cumulo rating liability across rateable assets in proportion to their NRCs. Components and services picked up their shares of cumulo according to how they used (or "occupied") these rateable assets. This allocation basis was used for at least 15 years and was subject to regular external audit. This allocation is relatively easy to administer, is relatively stable and has clear links to the CBV methodology. It also has strong links to the final output from an R&E model, which, as noted above, could be interpreted as the return the landlord is prepared to accept on his assets.
77. This allocation process was changed in 2008 to profit weighted NRCs. This followed discussions with Ofcom at which Ofcom suggested the allocation might reflect that the cash flow generating potential of assets might differ according to where they were in the network. For example, duct or fibre might have a different value depending on whether it was in the access or core networks. To reflect this idea, BT refined the allocation basis by weighting NRCs by broad market profitability. This change has the added advantage that it moves the allocation basis explicitly closer to a return on the landlord's assets which is what the R&E calculation is trying to determine.
78. BT considers that profit weighted NRCs are superior to other possible allocation methodologies. BT notes:
- revenue is a poor indicator of the use or occupation of rateable assets
 - product profitability is unsuitable as it does not reflect the use of just landlord's assets, and it would be unstable due to life cycle effects e.g. products in start-up phase
 - it is impossible to allocate costs to products based on the information from the R&E calculation used by the valuation authorities to inform their view of the RV of BT Plc's cumulo assessment (even if there was an R&E calculation that matched the RV)

- GRCs may provide a better reflection of the total physical stock of landlord's assets that are being rented. However GRCs do not reflect physical and technical obsolescence i.e. depreciation of the assets or rather the diminution in cash generating capability of the assets as they wear out.

Consequently, BT does not consider that Analysys Mason has provided any argument of a superior allocation methodology than the one currently utilised by BT.

Treatment of NGA

79. Analysys Mason argues that Ofcom should reallocate some cumulo costs from the core rental services to NGA. Based on an assumption that NGA lines are 10% more valuable than copper lines, Analysys Mason concludes that the unit costs should be reduced by £0.52 for MPF and £0.51 for WLR.
80. First, any rates that BT paid on NGA services in 2010/11, Ofcom's base year for their forecast, are *de minimis*. BT Plc's 2010/11 cumulo non-domestic charges in England, Scotland and Wales are based on new RVs that came into force on 1 April 2010. These assessments reflected the number of NGA and MPF connections then in place. Within this initial valuation the rating authorities require that the volume of NGA and MPF stays constant to comply with rating rules and principles. At 1 April 2010 there were around [3<] NGA connections. These connections had no material effect on the RVs that were adopted.
81. Growth in NGA after 1 April 2010 can only be reflected in BT's RV as a result of a reassessment on the grounds that there has been a material change in circumstances (MCC). For this purpose, an MCC is where circumstances constitute a change in "*matters affecting the physical state or physical enjoyment of the hereditament*".²⁸ A MCC can only be taken into account with effect from a specific date – the material day.
82. Second, the way that Ofcom constructed its forecasts of cumulo is straightforward. Ofcom took the 2010/11 Openreach forecast of transfer charges for cumulo rates and applied its non-pay inflation assumption and an efficiency assumption to forecast costs for future years.
83. Ofcom is explicit that it has not included any possible future MCCs into its forecasts. Ofcom noted that "*we have not incorporated any future rebates from MCC's because whilst in the past BT may have benefited from rebates part way through the change control period we do not believe these can be robustly forecast*".²⁹
84. As there was effectively nothing included for NGA services within Ofcom's 2010/11 cumulo forecast, increasing NGA demand post 1 April 2010 would be a MCC and Ofcom has not forecast MCCs, so it follows that Ofcom has not included any allowance for NGA services within its cumulo forecast. There is then nothing for Ofcom to reallocate away from the core rental services. Analysys Mason's argument therefore fails.
85. Finally, Analysys Mason's view that NGA lines within the BT Plc hereditament are more valuable than copper lines is at best questionable and is not a matter on which the VOA has expressed an opinion.

²⁸ The Local Government Finance Act 1988 [1988 Chapter 41] – Schedule 6, paragraph 2(7)(a).

²⁹ Ofcom consultation, paragraph A8.38.

- a) in relation to copper lines, Analysys Mason says “*The VOA probably knows that BT estimated a Cumulo cost per line in 2009/10 of approximately £5.50 for services on copper access lines*”.³⁰ That is extremely unlikely. The VOA would have had no interest in how BT Plc allocates its cumulo charges for regulatory purposes as these are irrelevant to its statutory duties to assess RVs.
- b) in relation to NGA, Analysys Mason says that the VOA “*proposes to assess NGA operators (other than BT) for Cumulo using an RV of GBP20 per home connected*”.³¹ Section 873 of the VOA’s rating manual provides guidance to industry on what rateable values might be for any new mass market NGA hereditaments. As no new mass market NGA hereditaments had been built the VOA had no evidence that it could use. The VOA therefore based its advice on the closest analogy: new cable TV networks built in the 1990s, now part of Virgin Media’s network. Such guidance is unlikely to be relevant to BT’s overlay NGA network. The VOA has not yet expressed any view about the contribution that NGA connections might have to BT Plc’s cumulo RV.

Therefore Analysys Mason’s conclusion that NGA lines are 10% more valuable than copper based lines are groundless.

MCCs for MPF loops

86. BT Plc pays the rates on MPF loops. That is a result of legislation introduced over the life of the 2005 rating list that “prescribed” BT Plc to do so.³² This was despite the fact that under rating law and principles, it was clear that CPs who rent MPF loops from BT should have been responsible for paying the rates on them. Prescription was imposed primarily on the grounds of administrative convenience.
87. Given the significant growth in MPF, there are strong arguments that it is no longer appropriate for BT to pay rates on MPF on behalf of other CPs. BT does not know of another case where one ratepayer is paying millions of pounds in non-domestic rates on behalf of another ratepayer.
88. As with NGA, any growth in MPF from the volume in place at 1 April 2010 can only be reflected in BT’s RV as a result of a reassessment on the grounds that there has been a material change in circumstances. Such reassessments are likely to lead to a reduction in BT Plc’s RV. BT currently allocates any such reductions across core classes of work on the basis that this is consistent with how the valuation effects are estimated.³³
89. CPs renting MPF loops are already receiving competitive benefits not available to other rate payers through prescription i.e. by BT Plc paying the rates on these loops. The allocation of any reductions in BT Plc’s rates liability as a result of increasing MPF volumes would confer even further benefits on CPs. Such a move would be counter to what would have happened in the absence of prescription and cannot be justified with respect to the underlying rating effects. To do so would exacerbate the impacts of what BT believes was poor legislation and would be contrary to the objective of prescription.

³⁰ Analysys Mason, *Cumulo rates*, 5 October 2011, page 7.

³¹ Analysys Mason, *Cumulo rates*, 5 October 2011, page 7.

³² See footnote 28.

³³ For example, see the witness statement of Mr Edward Dolling dated 9 November 2009 to the Competition Appeal Tribunal in Case 1111/3/3/09.